VULNERABILITY ASSESSMENTS

Current projects, gaps, and questions to move forward

Executive Climate Change Council - April 4, 2014

What is a vulnerability assessment?

- A tool to identify and prioritize the vulnerabilities that a system, asset, or population faces in relation to a particular threat. In this case, climate change.

Why do vulnerability assessments?

- Build public awareness
- Maximize limited resources by determining greatest needs
- Help defend decisions about investments or upgrades
- Scope and shape of assessments are driven by how the results will be used – each vulnerability assessment in the state has been unique. E.g.:
    - Do you need information to inform emergency response? *versus*
    - Do you need information to inform policy or investments to minimize risk in the longer term?

How are vulnerability assessments conducted?

- Four steps
    - **Scope**: determine goal and scale of assessment
    - **Gather** relevant data and expertise
    - **Assess** vulnerability
    - **Apply** assessment results to decision-making
- Vulnerability assessment step has three components
    - **Exposure** –determine the nature and extent of the threat
    - **Sensitivity** –determine the ability of the system, asset, or population to manage the exposure
    - **Impact**- determine the effect of exposure on the system, asset, or population (after factoring in its sensitivity)
        - Might be expressed in $$, property impacts, lives lost, community effects, etc.

Completed or ongoing vulnerability assessments

- Department of Health, impact of all climate hazards on Drinking Water facilities – completed
- Department of Health – impact of all climate hazards on general health of population – assessment complete, ongoing work funded by CDC
- Division of Planning – impact of sea level rise on transportation infrastructure – ongoing
- DEM – impact of all climate hazards on wastewater management – future or possibly ongoing
- CRMC – impact of sea level rise on wetlands – ongoing
- CRMC Beach SAMP – impact of coastal climate impacts on the coastline – ongoing
- National Grid – impact of flooding on substation – not sure what the current status
- Local assessments
    - Cranston – all hazards assessment with support from Narr Bay Estuarine Research Reserve (NBNERR)

- North Kingstown
  - sea level rise assessment with support from URI Sea Grant & Statewide Planning
  - economic, businesses and jobs assessment with support from EPA, Statewide Planning
- Newport – sea level rise assessment, focused especially on businesses
- Bristol – some transportation assessment
- Providence – assessment of vulnerabilities of low-income communities by ECRI
- May be others

Gaps in assessment

- Hazards that need more study
  - Riverine impacts. We need more assessments focused on *issues critical to inland communities* – no statewide effort (though there has been local work). We need the level of focus on the coast to come inland as well.
  - Heat impacts – HEALTH is focusing on this, but has built environment/natural environment impacts too
- Assets and systems that need more study
  - state-owned property
  - historic and cultural resources, incl. recreation
  - employment centers, jobs, businesses, commerce-related assets
  - healthcare facilities, other follow-on public health assessments related to DOH's climate work
  - stormwater management infrastructure
  - natural gas, energy production, telecommunications, electric grid, other utilities
  - dams – major safety concern
  - facilities that could spread contamination:
    - Solid waste, e.g. capped landfill sites such as BI,
    - brownfield sites
  - municipal properties, assets
  - groundwater, private wells, septic systems

Challenging questions to move forward

- How do we find the staff time and resources to fill the gaps we identify? We want to build consideration of climate change in our everyday activities, yet we have no additional resources to do so.
- Who is conducting vulnerability assessments, and is that the same group that implements recommendations based on assessments? Are people or entities missing from the process, and where?
- Are there clear gaps or deficiencies in coordination, pooling/sharing of resources? What are the reasons?
- How are we communicating results with the public and decision-makers? Are there more effective ways to do this?